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GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



KEITH CREAGH  
DIRECTOR

February 29, 2016

VIA E-MAIL

The Honorable Fred Upton  
United States House of Representatives  
Washington, DC 20515

The Honorable Frank Pallone, Jr.  
United States House of Representatives  
Washington, DC 20515

Dear Chairman Upton and Ranking Member Pallone:

Thank you for your letter of February 3, 2016, requesting information related to the water emergency that currently exists in Flint, Michigan. This letter and supporting materials are a response to your request for information.

**Question 1: Please describe the current and anticipated specific roles and responsibilities for federal, state, and city authorities in responding to the Flint water emergency. Please include in this response the identification of the lead Michigan Department of Environmental Quality (MDEQ) and Michigan Department of Health and Human Services (MDHHS) officials, including their offices, and other relevant state agency officials, and their offices, working on the response and providing technical assistance.**

The State can provide you with our perspective on the respective roles of the three government agencies, and, consistent with emergency response protocols, is leading the emergency response in Flint. But, the federal government and the city of Flint (City) have separate legal authority and responsibility for the Flint water system. Questions regarding their authority and responsibility may be better directed to those entities.

On January 4, 2016, the Genesee County Board of Commissioners declared a local emergency. On January 5, 2016, Governor Rick Snyder declared an emergency for Genesee County due to the ongoing health and safety issues caused by lead in the City's drinking water. This activated the State Emergency Operations Center. Governor Snyder subsequently mobilized the Michigan National Guard to help distribute water. On January 14, 2016, the Governor requested that President Barack Obama declare a major disaster and an emergency in Flint. Two days later, the President approved a declaration of emergency and requested \$5 million in federal aid. However, the President denied the request for declaration of a major disaster. The President also denied a subsequent appeal by Governor Snyder for a disaster declaration.

The emergency declaration and the activation of the Michigan State Police-led State Emergency Operations Center brings to bear a variety of resources and state agencies. Specific agencies, their roles, and key individuals are listed below.

### **Federal Government**

The federal government has devoted a variety of resources organized under the Unified Command Group. This includes:

- Federal Emergency Management Agency (Administrator W. Craig Fugate);
- U.S. Environmental Protection Agency (EPA) (Administrator Gina McCarthy);
- U.S. Department of Health and Human Services (Secretary Sylvia Mathews Burwell);  
and
- Centers for Disease Control and Prevention (Director Dr. Tom Frieden).

We suggest contacting these agencies for a thorough explanation of their roles and responsibilities.

### **State Government**

- Michigan State Police (MSP) (Director Col. Kriste Etue):
  - Activate the State Emergency Operations Center (Capt. Chris Kelenske is lead) and a Joint Information Center (MSP, rotating lead).
- Michigan Department of Environmental Quality (Director Keith Creagh):
  - Continue to respond to Flint's drinking water emergency. George Krisztian, the Flint Action Plan Coordinator, is lead.
  - Compliance with the January 21, 2016, EPA Order. Chief Gary Hagler is lead on tracking MDEQ progress.
  - Coordinate with other agencies on residential water testing. George Krisztian is lead.
  - Coordinate with other agencies testing public and parochial schools, daycare centers, boys and girls clubs, and facilities with at-risk individuals. George Krisztian is lead.
  - Coordinate with other agencies on testing for elevated blood levels. George Krisztian is lead.
  - Coordinate with other agencies on testing of food service establishments. George Krisztian is lead.
  - Coordinate with other agencies on establishing and testing sentinel sites. Jim Sygo and Susan Leeming are co-leads.
  - Coordinate cooperation with the EPA Order and other agency demands through an Emergency Command Center in Lansing. Chief Gary Hagler is lead.

- Analyze residential water sampling results and provide results back to residences. Kirby Shane is lead.
- Michigan Department of Health and Human Services (Director Nick Lyons):
  - Coordinate with other agencies on residential water testing. Linda Dykema is lead.
  - Coordinate with other agencies on elevated blood level testing. Linda Dykema is lead.
- Michigan Department of Licensing and Regulatory Affairs (MDLARA) (Director Michael Zimmer):
  - Coordinate with other agencies on school, child daycare, adult foster home, nursing home, and dialysis faucet replacement. Alesha Gensler is lead.
  - Coordinate targeted community outreach. Karen Phillippi is lead.
- Michigan Department of Agriculture and Rural Development (Director Jamie Clover Adams):
  - Coordinate with other agencies to test drinking water in food service establishments. Sandra Walker is lead.

#### **Local Government**

- City of Flint (Mayor Karen Weaver):
  - Comply with its obligations as the water supplier for its citizens.
  - Comply with certain items in the EPA Order.
  - Coordinate with other agencies on residential water testing. Mike Glasgow is lead.
  - Coordinate with other agencies to identify sentinel sites and judge their effectiveness. Mike Glasgow and Mayor Weaver are leads.
- Genesee County Health Department (Health Officer Mark Valacak):
  - Coordinate with other agencies on elevated blood level testing. Jim Henry is lead.
  - Coordinate with other agencies on food service establishment testing. Jim Henry is lead.

**Question 2: Please outline the procedures federal, state, and local authorities will take to assess the scope and levels of public exposure to lead and other contaminants of concern through the Flint drinking water system, including:**

- a. current available exposure information and lead levels in different parts of the drinking water system;**
- b. the timing for completing this assessment; and,**
- c. the benchmarks MDEQ and the U.S. Environmental Protection Agency's (EPA) consider necessary to determine that Flint's drinking water is safe for consumption and use.**

The State, in cooperation with the EPA and the City, has been taking responsive actions to address potential lead exposure since the August 5, 2015, letter to the City (included in the supplemental materials). Months after the State took these actions, the EPA issued an Order on January 21, 2016, under the Safe Drinking Water Act. The State had already implemented many of these directives prior to the Order and will continue to take appropriate actions.

**2a.** In compliance with the January 21, 2016, EPA Order, the State continues to provide lead water sampling results and posts those results daily to the Flint Water Web site: [www.michigan.gov/flintwater](http://www.michigan.gov/flintwater). The most recent results of blood lead level tests have been posted to the Web site, by ZIP Code, as well. Both sets of data are provided in the supplemental material.

Residential lead water sampling results from February 24, 2016, show the following:

- 11,420 sample results were at or below 15 parts per billion (ppb) (in compliance with the Lead Action Level; continue filter use and maintenance). This represents 93.2 percent of samples.
- 676 sample results were from 16-100 ppb (above the Lead Action Level; continue filter use and maintenance; additional documentation sent to residents). This represents 5.5 percent of samples.
- 45 sample results were from 101-149 ppb (above the Lead Action Level; continue filter use and maintenance; triggers water home visits within seven days). This represents 0.4 percent of samples.
- 111 sample results were greater than 150 ppb (above the rating for filters; triggers health home visits within 48 hours). This represents 0.9 percent of samples.

**2b. and 2c.** The State is employing a five-pronged sampling strategy to address the Flint water emergency.<sup>1</sup> Briefly, the five-pronged strategy includes:

1. Residential testing coordinated by the MDEQ, MDHHS, and the City.
2. School testing coordinated by the MDEQ and the MDLARA.
3. Elevated blood lead level testing coordinated by the MDHHS, MDEQ, and Genesee County Health Department.
4. Food service establishment assessments coordinated by the MDARD, MDEQ, and Genesee County Health Department; and
5. Sentinel site testing coordinated by the MDEQ, which is communicating with residents at sampling sites as well as collecting and testing all residential samples.

Specific measures and actions related to these five areas are contained in supplemental documents.

The State had an initial goal of establishing 400 sentinel sampling sites at representative locations throughout the City to determine the effectiveness of corrosion controls and help establish when water will be safe for consumption. A team consisting of MDEQ staff, a local plumber, and a community member visited each home to drop off sampling bottles, explain the sampling protocols, evaluate the homes fixtures, and then return to pick up the bottles after a first draw sample is collected by the resident. After two weeks of home visits, the State had over 500 participants. The first round of sentinel sites came back with almost 90 percent of the homes at or below 15 ppb (i.e., below the federal Lead Action Level). Again, all of these results are posted and continually updated on the Flint Water Web site. Further data is expected this week, and regular updates will continue.

As part of the State's commitment to be fully engaged partners in solving this crisis, any time a residential sample result comes back from the laboratory at over 100 ppb, a team is sent to the home to evaluate the fixtures, plumbing, and service line. Samples at over 15 ppb but below 100 ppb receive a phone call from the MDEQ to discuss their results and what the resident can do to minimize exposure.

In addition, a Flint Water Interagency Coordinating Committee (FWICC) was established by Executive Order 2016-1 on January 11, 2016. The FWICC consists of representatives from state and federal governments and various agencies, as well as independent professionals such as Dr. Marc Edwards of Virginia Tech, Dr. Mona Hanna-Attisha of the Hurley Medical Center, Dr. Laura Sullivan of Kettering University, and Dr. Lawrence Reynolds of the Mott Children's Health Center. A full list of the Committee members is included in the supplemental materials. The FWICC is an advisory body that will help the local, state, and federal governments analyze all of the

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<sup>1</sup> In practice, sampling duties have been shared in the manner discussed above.

sampling and protocol information to help determine if, and when, the water is safe for consumption again.

Through the water quality subcommittee of the FWICC, the State is developing specific metrics that will be presented to the larger FWICC as recommended factors to determine when Flint has safe, drinkable water. These metrics are expected to exceed the requirements of the Safe Drinking Water Act's Lead and Copper Rule (LCR).

**Question 3: Provide an estimate of the timing for corrosion control to provide sufficient coatings on service lines to reduce lead in the drinking water to safe levels, as well as any factors that could affect this timeline and the effectiveness of this approach.**

On October 16, 2015, the City switched back to the Detroit Water and Sewerage Authority<sup>2</sup> for its drinking water. The DWSD has in place a corrosion control treatment, and supplemental orthophosphates that provide additional corrosion control began flowing through the system on December 9, 2015. The State, in coordination with partners, has a well-defined strategy for providing necessary data through sentinel site sampling to make a judgment about the effectiveness of corrosion controls. Corrosion control treatment will be continually tested to ensure long-term effectiveness.

At this time, we cannot provide a date certain regarding the timeline for corrosion control effectiveness because a number of variables could influence the outcome. These variables include the source water quality as well as treatment methods that may be employed by the public water system. Some of the variables in Flint's source water quality that can affect corrosiveness and the selection of corrosion control treatment include pH, temperature, hardness, alkalinity, chlorides, conductivity, and iron levels. Another significant variable is the movement of water throughout the system. Part of the effectiveness is dependent on use and the continued flow of treated water through the pipes. The MDEQ, EPA, and City agreed last November that the City should apply additional orthophosphate to the water supplied by the DWSD to increase the distribution system phosphate residual to a minimum of 3.1 milligrams per liter as phosphate. The City-wide monitoring program that is underway will reveal if this plan is successful as regular sampling of sentinel sites will provide trends in water quality.

In addition, the information contained in the final memo from EPA employee Miguel Del Toral (included in the supplemental material) on high lead levels at one residence in Flint raised concerns that surrounding disturbances (construction near pipes) is causing lead on fully coated pipes to break free. This concern is addressed in the State's replacement strategy for service lines. The State continues to advocate that any replacement of service lines should be conducted street-by-street, focused on streets and neighborhoods that have the highest concentration of high-risk locations. City records detailing where lead service lines are located have proven to be unreliable and, therefore, difficult to estimate the total replacement time. We will continue to explore

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<sup>2</sup> As of January 1, 2016, the Great Lakes Water Authority (GLWA) assumed ownership of the source, treatment, and transmission facilities that were previously under the ownership and control of the Detroit Water and Sewerage Department (DWSD).

technologies that could minimize the effects of disturbance. As was evidenced by the Washington, DC, lead crisis, partial service line replacement may cause higher lead levels at specific residences. Our primary goal is to replace all lead service lines without creating additional health risks for the people of Flint.

**Question 4: EPA's January 21, 2016 Emergency Order details several required actions by the Michigan Department of Environmental Quality and the City of Flint. Has MDEQ or the Flint's Public Water System provided the information requested by the EPA Flint Task Force in November to the EPA? If not, when does MDEQ anticipate providing a response to this request as required in paragraph 52 of EPA's January 21, 2016 order?**

As discussed in response to earlier questions in this letter, the State was well underway in responding to the Flint water crisis when the Order was issued. Three months after the water source had been changed back to DWSD (in consultation with EPA), the EPA issued its Emergency Order.

A detailed accounting of the State's response to the EPA Order is contained in the supplemental materials and can be found along with recent communications to the EPA regarding the order on the Flint Water Web site.

It should also be noted that one of the main challenges for the State in fulfilling the Order is the lack of reliable data from the City on lead service lines and the 10-day time frame the EPA required for mapping these locations. Of the 56,254 parcels in the City, the State has been able to determine 5,282 have lead service lines and 25,302 have another type of service line. That leaves a remaining 25,800 parcels (10,618 residential parcels) with an unknown service line. The State is continuing to explore technologies that could assist in identifying the remaining unknown lines.

**Question 5: Describe in detail when and how MDEQ learned that Flint had no corrosion control treatment in place.**

- a. When and how did MDEQ learn that Flint chose not to implement a corrosion control treatment?**
- b. What is MDEQ's understanding of why Flint chose not to implement an optimized corrosion control treatment?**
- c. At any time between April 2014 and April 2015, did MDEQ believe that Flint implemented an optimized corrosion control program or treatment? If so, please describe MDEQ's understanding of the optimized corrosion control program or treatment.**
- d. What was the extent, if any, to which Flint's treatment for controlling E. coli, and its resultant treatment for disinfection by-products (trihalomethanes), contributed to pipe corrosion?**

**e. Why did MDEQ not require Flint to have a corrosion control treatment in place at the time of the switch to Flint River water? Please describe the basis for this decision.**

**f. Did MDEQ or the Flint drinking water system perform or rely on an assessment of the Flint River water's quality, including information that might pertain to the potential of the Flint River's water to cause corrosion within the Flint drinking water system, prior to the use of the Flint River as a drinking water source?**

**g. What analyses, including but not limited to legal analysis, did MDEQ perform regarding the decision not to require Flint to implement a corrosion control treatment? Please provide copies of any memoranda reflecting this analysis, including any memoranda provided to EPA.**

**5a. and 5b.** When the Flint River became the source of drinking water for the City, the MDEQ reviewed its shared responsibility with local government to determine requirements for the plant. In considering the implementation of the Safe Water Drinking Act's LCR, the MDEQ determined that the Flint water system should be treated as a new drinking water system. Therefore, the MDEQ decided to conduct full-scale monitoring of the system under the LCR to determine if optimized corrosion control treatment was needed. When the Flint Water Plant began operation as the primary source of drinking water for residents in May 2014, the MDEQ requested that the City enter into the required program of corrosion control "optimization," which under an interpretation of the LCR being used by the MDEQ at the time, requires only initial testing – not treatment – of the water. The Flint Water Plant's operations had been tested on a quarterly basis, and the water generated met the criteria under the Safe Drinking Water Act – it had 0 ppb of lead. Since that time, the EPA sent a memo acknowledging that there could be varying interpretations of the LCR and clarifying a proper path going forward. A Michigan Auditor General's report has concurred that the EPA's language in the LCR is ambiguous.

**5c.** Because this testing regimen had been established, at no time between April 2014 and April 2015 did the MDEQ believe that Flint had implemented optimized corrosion control treatment. Instead, the City had begun a monitoring program that the MDEQ believed was consistent with the LCR's corrosion control requirements to determine if there was a need for additional treatment to achieve optimized corrosion control. As explained below, the EPA determined this was a plausible, and legally supportable, reading of the LCR. It was this monitoring *program* outlined by the LCR that was described by the MDEQ staff as "an optimized corrosion control program." That statement was accurate and in no way implied that Flint was actively undertaking corrosion control *treatment*.

**5d.** This is not known.



**5e.** The decision not to require immediate optimized corrosion control treatment was based on the MDEQ's reading of the LCR. In a November 3, 2015, memo (included in the supplemental material), the EPA clearly states that the rule can be interpreted in different ways. The memo states that the type of situation encountered in Flint "rarely arises" and that "the language of the LCR does not specifically discuss such circumstances." The memo states: "After reviewing the rule with our Office of General Counsel, it appears that there are differing possible interpretations of the LCR with respect to how the rule's optimal corrosion control treatment procedures apply to this situation, which may have led to some uncertainty with respect to the Flint water system."

In addition, in the many conversations between the City, EPA, and MDEQ on implementation of the LCR, the EPA did not provide clear guidance to the State or City. In fact, the EPA failed to provide the legal opinion requested by the MDEQ until November 2015, after the City had already switched water supplies. The EPA's Miguel Del Toral wrote a June 24, 2015, draft memo raising concerns about the high lead levels in Flint's water, but that memo remained in draft form until November 2015. When the MDEQ inquired about the report, after media sources received copies of the draft, the MDEQ was told to ignore the draft. EPA Region 5 Administrator Susan Hedman, in fact, apologized for Mr. Del Toral's draft memo in an e-mail to the Flint Mayor. Both of these correspondences are included in the supplemental material.

On August 17, 2015, when results of the second round of sampling had been fully reviewed, the MDEQ notified the City that while the results of the City's monitoring met the Lead Action Level, the City did not demonstrate it had achieved optimal corrosion control, and therefore, additional corrosion control treatment was required in the system. The City was advised to provide this optimal corrosion control treatment on an accelerated schedule.

The State has also raised concerns about the level of accuracy in the sampling that the City conducted. Based on the City's comments, it appears that the City may have been falsely certifying that its sampling met the Tier 1 sampling requirements in the LCR.

**5f.** In July 2011 the City hired engineering firms to assess the Flint River as a potential source of drinking water. The assessment, provided in the supplemental material, found that water from the river could be treated to meet current regulations, but that additional treatment would be required beyond the treatment being done by DWSD, which was drawing water from Lake Huron. In an appendix, the report identifies phosphates as a potential cost for using the Flint River as a drinking water source, but no mention of phosphates was made in the report itself. No analysis of the corrosiveness of the water or optimized corrosion control is contained in the report.

**5g.** Documents explaining the MDEQ's reasons for interpreting the LCR as it did are provided in the supplemental materials. As noted in the November 3, 2015, memo, the EPA acknowledges that the LCR is subject to varying interpretations in a situation such as the one in Flint.

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**Question 6: Please provide copies of all briefing materials prepared by MDEQ personnel for federal, state, and local officials from January 2013 through February 2016 relating to the Flint drinking water system, including the decision to use the Flint River as a drinking water source.**

The requested documents are provided in the supplemental materials.<sup>3</sup>

**Question 7: Please provide copies of all briefing materials provided by EPA to MDEQ personnel from January 2013 through February 2016 relating to the Flint drinking water system.**

The requested documents are provided in the supplemental materials.<sup>4</sup>

**Question 8: If EPA performed a compliance audit of Flint, Michigan's drinking water system under the Safe Drinking Water Act?**

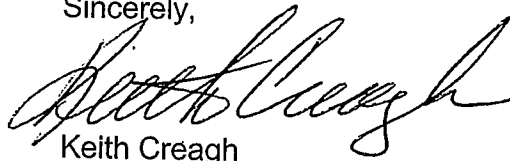
**a. When did such a compliance audit last occur?**

**b. What actions, if any, did MDEQ undertake in response to EPA's review?**

A copy of the most recent review of MDEQ's public water supervision program, dated August 30, 2010, is provided in the supplemental materials. Also provided are the most recent program summaries produced annually by the EPA regarding MDEQ's public water supervision program. Based upon these evaluations, the EPA continues to find Michigan's drinking water program to be compliant with the federal Safe Drinking Water Act.

If you need further information regarding this matter, please feel free to contact me.

Sincerely,



Keith Creagh  
Director  
517-284-6700

Enclosures

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<sup>3</sup>To the best of our knowledge, this is the universe of documents that responds to this question. Staff continue to search a great deal of information regarding this question, and it is possible that other documents not yet discovered are responsive to this request.

<sup>4</sup> To the best of our knowledge, this is the universe of documents that responds to this question. Staff continue to search a great deal of information regarding this question, and it is possible that other documents not yet discovered are responsive to this request.

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cc: Mr. Bill McBride, Governor's Washington Office  
Mr. Eric Brown, Governor's Washington Office  
Mr. Jim Sygo, Chief Deputy Director, MDEQ  
Ms. Madhu R. Anderson, Deputy Director, MDEQ  
Ms. Maggie Pallone, Deputy Director, MDEQ

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